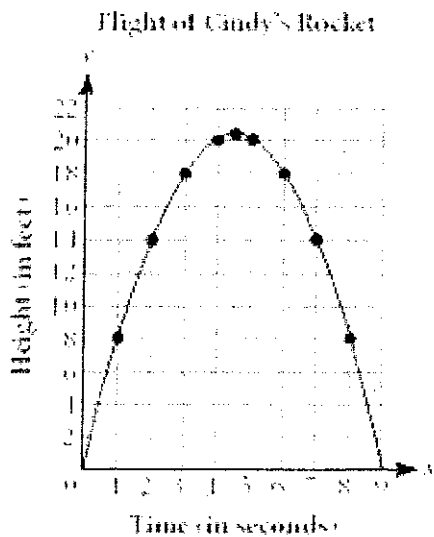


Quadratics Test Prep

- 1). A function f is defined by $f(x) = -4(x+3)^2 - 5$.
- A function g is a transformation of f by a horizontal shift of 4 units right and a vertical shift of positive 6 units.
 - Write the equation for $g(x)$

- 2) The graph below shows the height of Cindy's model rocket during the course of its flight.

Which of these equations can be used to find the height of the rocket at any time during its flight?



- (a) $y = 9x$
- (b) $y = x^2 - 81$
- (c) $y = -x^2 + 9x$
- (d) $y = 9 - 9x^2$

3) Given the function f defined by $f(x) = -2x^2 + 8x + 5$,

which of the following is a correct statement about the graph?

- A) Parabola that opens up and has a vertex at $(2, 13)$
- B) Parabola that opens down and has a vertex at $(2, 13)$
- C) Parabola that opens up and has a vertex at $(-2, -19)$
- D) Parabola that opens down and has a vertex at $(-2, -19)$

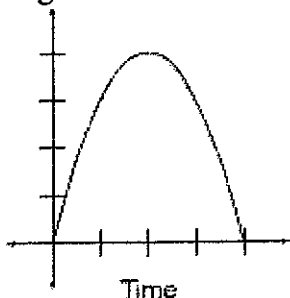
4) An object dropped from a plane flying at 3000 ft.

As the object falls, d , its distance above the ground after t seconds is given by the formula below:

$$d = -16t^2 + 3000$$

- How far above the ground is the object when it has fallen for 2 seconds? 5 seconds?

5) Which of the following could be shown by the graph?



- (a) the height of a candle as it burns over time
- (b) the height of a ball thrown straight upward over time
- (c) the distance covered by a car traveling at a constant speed over time
- (d) the height of water in a tank being drained at a constant rate over time

6) What is the value of x in the equation

$$\sqrt{2 - 3x} = 4i \quad ?$$

Factoring Review + Test Prep

- 1) What are the factors of $x^2 - 13x - 30$?
- 2) What is a common factor of $x^2 - 16$ and $x^2 - 9x + 20$?
- 3) Factor Completely: $2x^2 - 8$
- 4) If $4x$ is one factor of $4x^2 - 12x$, what is the other factor?
- 5) The greatest common factor of $8a^2b^3$ and $24ab^2$ is what?